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CASE REPORT

Unilateral hypoplastic breast in a male-to-female transsexual with Poland syndrome after gender reassignment — reconstructive considerations☆

E.J. Majdak-Paredes [a,b], M. Shafighi [a,c], F. Fatah [a,*]

[a] Department of Plastic and Reconstructive Surgery, City Hospital Birmingham, Birmingham, UK
[b] Department of Plastic and Reconstructive Surgery, St Thomas Hospital, London, UK
[c] Department of Plastic and Reconstructive Surgery, Norfolk and Norwich University Hospital, Norwich, UK

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Summary Gender reassignment procedures are performed more frequently nowadays due to a multidisciplinary approach and improved techniques and selection process. Many male-to-female patients require bilateral breast augmentation as part of the transformation following the gender reassignment if they fail to develop female breast features after hormonal treatment. We report on a very rare incidence of male-to-female gender reassignment in a patient with Poland syndrome. A male-to-female transsexual on hormonal therapy for gender reassignment developed one normal female-shaped breast whereas the other breast remained hypoplastic. As a male, he was not aware of his chest wall deformity but it became a major issue after successful gender reassignment surgery. Our experience with the specific reconstructive considerations and recommendations regarding our surgical approach to this complex reconstructive problem are discussed.

Gender reassignment procedures are performed more frequently nowadays due to the development of multidisciplinary approaches and improvement in techniques and selection process. In male-to-female transsexuals, female breast development occurs due to hormonal replacement therapy. However, sometimes the size of the naturally developing breasts might be an issue for these patients and some of them eventually request breast augmentation.

We report on a very rare incidence of male-to-female gender reassignment in a patient with Poland syndrome. A male-to-female transsexual on hormonal therapy for gender reassignment developed one normal female-shaped

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* Corresponding author. Address: Department of Plastic and Reconstructive Surgery, City Hospital Birmingham, Dudley Road, Birmingham, UK. Tel.: +44 121 577 5111.
E-mail address: ffatah@aol.com (F. Fatah).

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breast whereas the other breast remained hypoplastic. As a male, the patient was not aware of his chest wall deformity, but it became a major issue after successful gender reassignment surgery.

Poland syndrome is relatively rare and it is believed to result from a vascular event during the critical sixth week of gestation with hypoplasia of the subclavian artery causing musculoskeletal malformations.[1–3] However, Poland syndrome in a gender reassignment patient must be extremely rare.

We describe our experience of treating such a rare condition, anatomical considerations and our surgical approach to this complex breast and chest wall deformity.

Case report

A 39-year-old male-to-female transsexual presented to the plastic surgical outpatient clinic with breast asymmetry following hormonal therapy for gender reassignment (Figures 1, 2). She has been on conjugated oestrogens for several years to reduce the hormonally-induced secondary characteristics of the original sex and to induce secondary female sex characteristics. After hormonal treatment she developed a normal female-shaped right breast whereas the other breast and nipple areola complex (NAC) remained hypoplastic; she became aware and self-conscious of her chest wall and breast asymmetry. Clinical examination showed a completely absent left pectoralis major muscle, gross breast asymmetry with hypoplastic left breast and NAC, and asymptomatic scoliosis. This was diagnosed as a case of Poland syndrome. She underwent gender reassignment surgery a year before she was referred to us. She also suffered from mild depression and was very keen to have surgical correction of her breast asymmetry.

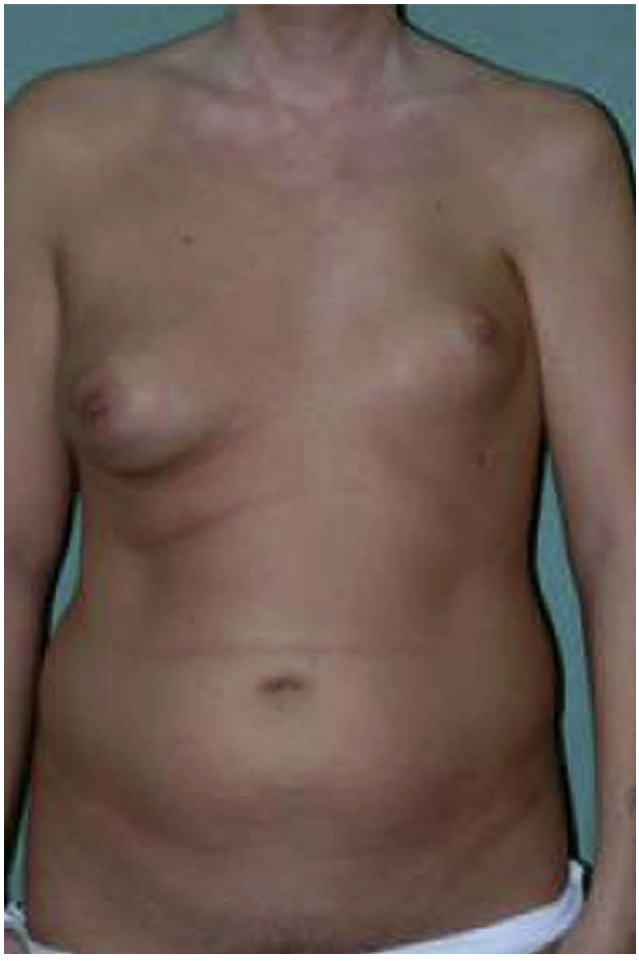

Figure 1 First stage preoperative anteroposterior view before insertion of the tissue expander showing chest wall deformity and gross breast asymmetry, including the size and position of the NAC.

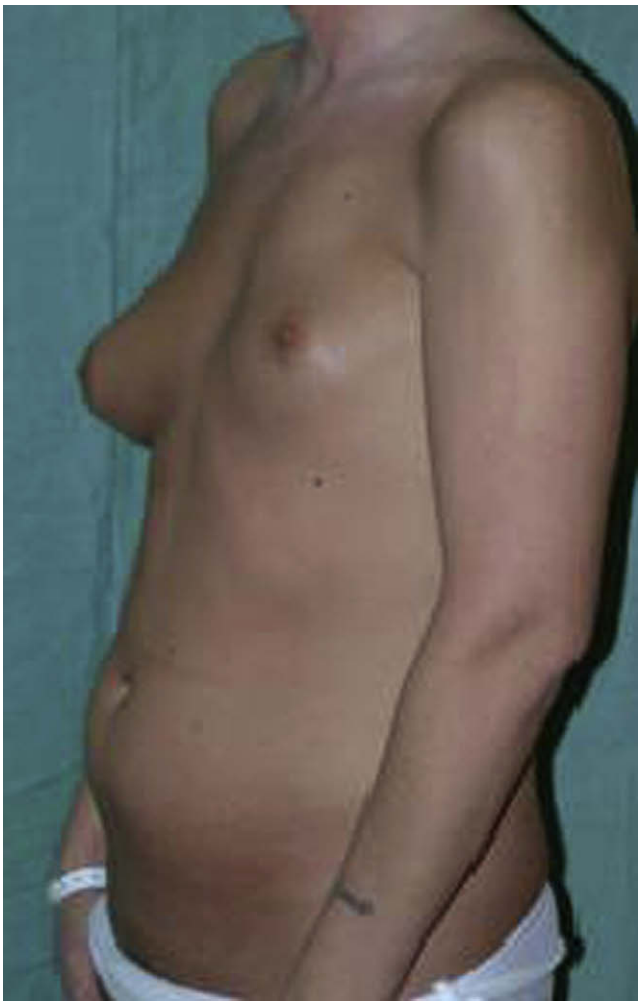

Figure 2 First stage preoperative oblique view of the deformity.

After detailed discussion with the patient and exploring her various options, she underwent left breast reconstruction in a multi-stage procedure involving a combination of tissue expansion and delayed unilateral muscle-preserving pedicled transverse rectus abdominis myocutaneous (TRAM) flap. Different reconstructive methods were discussed with the patient including single- and two-stage implant techniques, a combination of extended latissimus dorsi myocutaneous flap and implant reconstruction, single-stage TRAM flap and multi-stage combination of tissue expansion with TRAM flap as a more advanced form

of reconstruction. The merits and the pros and cons of each technique in terms of the quality of the reconstruction, possible complications and donor site morbidities were fully discussed with the patient. The patient chose the procedure that would give her the most natural looking breast, maximum possible symmetry and minimum donor site deformity. The senior author had already treated several young female patients with unilateral severe breast hypoplasia using the same technique with very favourable results.

In the first stage the breast was expanded with a style 133LV 200 cc tissue expander which was inserted in a submammary pocket and inflated to 150 cc initially. Additionally, the superficial epigastric vessels were divided bilaterally via suprapubic incision and the left inferior epigastric vessels were divided via incision through the anterior rectus sheath and muscle split. The tissue expander was further inflated in outpatient clinic to 300 cc in total.

Five months later, an interval that was dictated by time restraints of the NHS waiting list at the time, she underwent the second stage procedure — removal of tissue expander and reconstruction of the left breast tissue with a muscle-preserving pedicled TRAM flap (Figure 3). The flap was delayed in order to maximise the tissue harvest to help correct the contour deformity in the infraclavicular region. The flap was de-epithelialised except for a narrow ellipse of skin which was inserted above the NAC to lower its level and also to act as a monitor.

Postoperative recovery was uneventful. After 6 months, there were still elements of residual asymmetry to be dealt with. She required further corrections of a tethered scar and contour defect above the left NAC with autologous fat injection and widening of the left areola with a tattoo. She also required minor adjustment to her right breast, including repositioning of and adjustment of the size of the right NAC (Figure 4).

Discussion

Mammogenesis in male-to-female transsexuals follows a pattern similar to female pubertal mammogenesis.[4] On average, an approximate B cup size can be achieved with hormonal therapy and subsequently some patients request augmentation mammoplasty to achieve bigger sizes.[5] In our case hormonal therapy induced normal development of one breast whereas the breast and NAC at the side of the absent pectoralis major muscle remained hypoplastic.

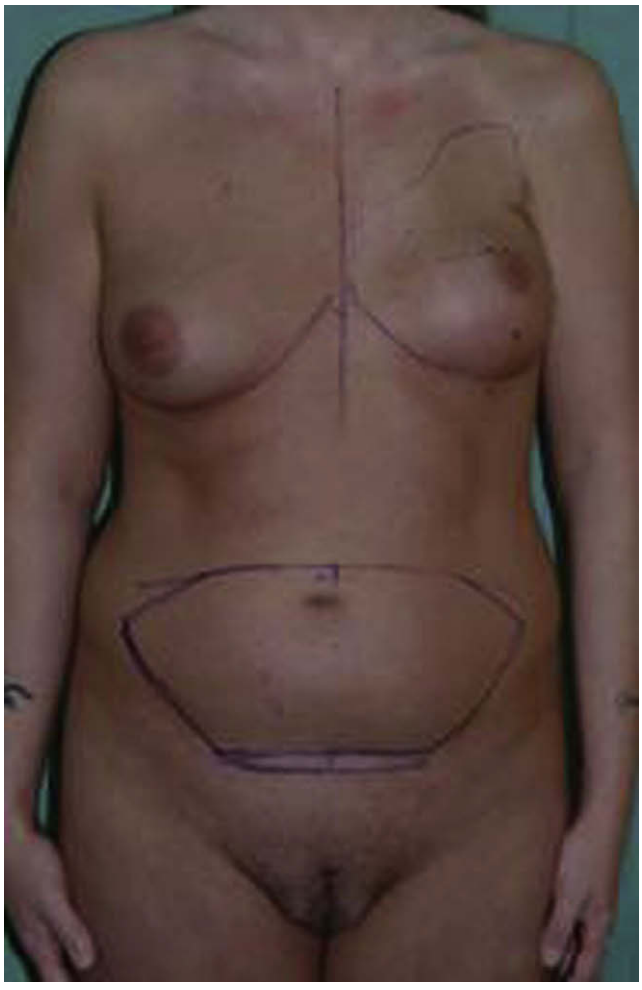

Figure 3 Second stage preoperative view with the tissue expander in place and the patient marked for TRAM flap reconstruction.

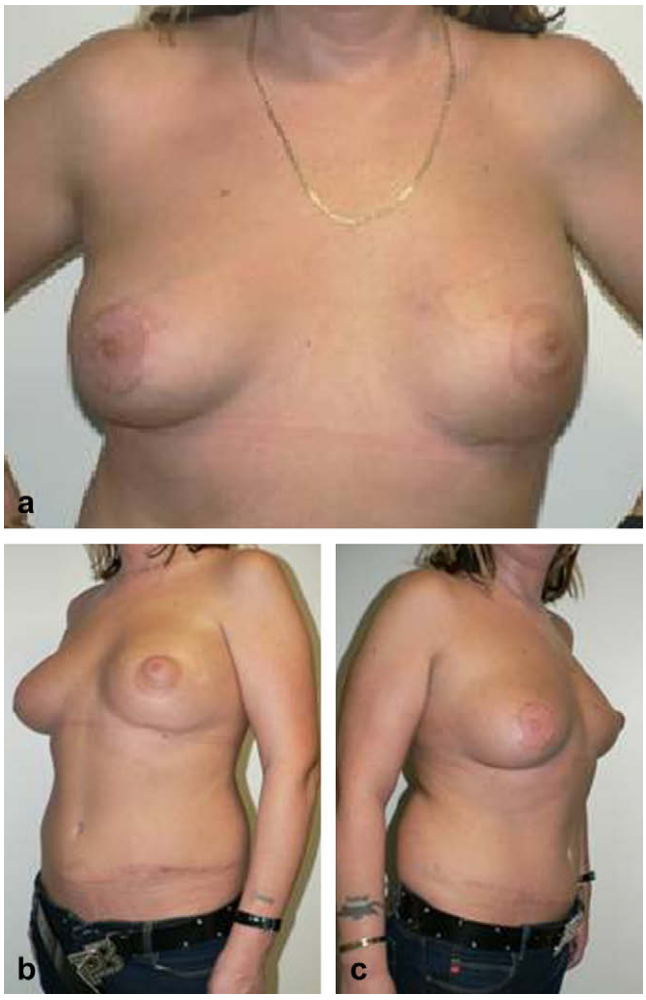

Figure 4 (a—c) Different views of the final result.

The patient was unaware of the chest wall defect as a male; therefore, the diagnosis of Poland syndrome was first made after the deformity became visible following gender reassignment treatment. In this case, although augmentation mammoplasty was an option, it would not have achieved a satisfactory correction of the multifaceted and complex asymmetry for obvious reasons and, furthermore, the patient declined that option. The aim of breast reconstruction must be to achieve a normal looking breast that feels natural and mimics the contralateral side in terms of appearance and consistency with the minimum of asymmetry. Ideally, in the long term, such a reconstruction should be maintenance free. To this end, autologous tissue reconstruction is the procedure of choice. Creating a natural skin envelope for the breast with tissue expansion, enhances the quality of the reconstruction and further reduces the elements of asymmetry between the two sides.

There are significant differences between male and female anatomic structures of the chest wall, which can limit the range of reconstructive options and renders correction of a chest wall deformity in a male-to-female gender reassignment patient extremely challenging.[5,6] Women have a greater quantity of fat, which also serves to obscure the muscular form. Mammary fat overlying the inferior free margin of the pectoralis muscle, upper part of the serratus and the oblique abdominal muscles, accounts for the outer smoothness of the entire female chest. Additional axillary fat disguises the form of the coracobrachialis, lateral part of serratus, latissimus dosi and teres major muscles.[4–6]

We are not aware of any reported case in the literature which would deal with a similar problem. In our surgical approach to this complex reconstructive problem we followed several basic reconstructive principles and technique, namely, tissue expansion, delayed phenomenon and muscle-preserving pedicled TRAM flap transfer, autologous fat injection and tattooing to reduce asymmetry to the minimum possible.

We used tissue expansion to stretch the skin and create a pocket for the autologous tissue augmentation to create a natural looking and feeling breast with a degree of natural ptosis.

Although the initial cosmetic result that was achieved with our approach was satisfactory, in general our patient required several subsequent additional procedures afterwards to improve the appearance of the reconstructed breast and further reduce the level of her breast asymmetry rather than producing complete symmetry.

The asymmetry of the shape, size and position of the NAC added to the complexity of the reconstruction. Hormonal treatment induced normal development of the nipple areola in the unaffected breast, but on the side of the missing pectoralis major muscle, the NAC did not develop to a female pattern.

There are no data on development of the NAC in male-to-female transsexuals with Poland syndrome; however, in general, the male and female areola complex is quantitatively different, but qualitatively identical.[3–5] Thus, the male NAC will eventually transform towards the female under the influence of oestrogen.

Symmetry and female appearance of the NAC in our patient with Poland syndrome was achieved by a combination of nipple tattooing of the affected side as well reduction in the size of the areola on the normal side.

Chest wall deformities and breast asymmetry in male-to-female gender reassignment patients are not recognised features thus far. With the increasing number of such transformations being carried out worldwide, this problem will increase eventually. We report on the first recognised such problem of a patient who became aware of her chest wall deformity only after gender reassignment treatment and we present our way of dealing with this complex problem. Perhaps, patients who undergo such transformations should be examined for evidence of chest wall deformities and breast asymmetry and be warned that the deformity may become significantly more obvious after surgery and may require complex and multiple procedures to correct.

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